

PERAC AUDIT REPORT



MWRA Contributory Retirement System

JAN. 1, 2000 - DEC. 31, 2002 / PERAC 02: 10-106-03



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PERAC

COMMONWEALTH OF MASSACHUSETTS | PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

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JOSEPH E. CONNARTON, *Executive Director*

December 15, 2004

The Public Employee Retirement Administration Commission has completed an examination of the **MWRA** Retirement System pursuant to G.L. c. 32, § 21. The examination covered the period from January 1, **2000** to December 31, **2002**. This audit was conducted in accordance with the accounting and management standards established by the Public Employee Retirement Administration Commission in regulation 840 CMR 25.00. Additionally, all supplementary regulations approved by PERAC and on file at PERAC are listed in this report.

In our opinion, the financial records and management functions are being performed in conformity with the standards established by the Public Employee Retirement Administration Commission with the exception of those noted in the findings presented in this report.

In closing, I acknowledge the work of examiners Harry Chadwick and Robert Madison who conducted this examination and express appreciation to the Board of Retirement and staff for their courtesy and cooperation.

Sincerely,



Joseph E. Connarton
Executive Director



MWRA Retirement System

EXPLANATION OF FINDINGS AND RECOMMENDATIONS

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

1. **Cash and Investments**

As of the audit date, PERAC auditors could not certify cash. Cash has not been reconciled for over seven months (since November 30, 2003). The latest cash reconciliation available to the auditors was November 30, 2003. The Mass Municipal Deposit Trust cash balance was \$74 less than the amount reported on the Trial Balance.

Recommendation:

The Retirement Administrator should receive and review copies of monthly cash reconciliations and the Retirement Board should review cash account reconciliations at monthly Board meetings. PERAC regulation 840 CMR 25.31 (6) encourages the Board to review financial statements such as cash reconciliations and trial balances on a monthly basis. The Retirement Board should provide PERAC auditors with a detailed reconciliation of outstanding cash balances.

Board Response:

PERAC's Recommendation has been accepted and implemented by the Board. The retirement administrator is now reviewing monthly cash reconciliations and financial statements.

2. **CY 2002 Accounting**

Investment schedules and the supplemental membership schedule values do not always agree with the Annual Statement numbers and in some cases the Trial Balance. Examples of differences include but are not limited to:

- A. Total interest due and accrued of \$858,397.88 (reported on Schedule 3B Domestic Fixed Income Securities Purchased During Year, Paid Accrued Interest) in 2002 does not equal the Paid Accrued Interest of \$825,066.62 on the Investment Income (page 6, account 4823).
- B. Unrealized Gains and Unrealized Losses as reported on the 2002 Annual Statement Investment Income (page 6) does not reconcile to Schedule 3A, Domestic Fixed Income Securities Owned at End of Year and Schedule 4A, Equities defined as Stocks or Options.
- C. The December 31, 2002 Supplemental Schedule of members' Annuity Savings Fund balances does not reconcile in detail to the prior years' ending balances. The Annuity Savings Fund represents contributions received from MWRA member payroll deductions based on prescribed contribution rates. Year ended 2000 and 2001 Supplemental Schedules reconcile to the Annuity Savings Fund.

MWRA Retirement System

EXPLANATION OF FINDINGS AND RECOMMENDATIONS (CONT.)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

Recommendation:

MWRA must establish internal control review procedures or possibly procure the services of consultants to assure the completeness and accuracy of monthly financial reporting and to ensure the accuracy of year-end financial reporting.

A. Total Interest Due and Accrued on Schedule 3B should equal Paid Accrued Interest on the Annual Statement Investment Income page.

B. Unrealized Gains and Unrealized Losses in the CY 2002 Annual Statement Investment Income should reconcile to Schedule 3A, Domestic Fixed Income Securities Owned at End of Year and Schedule 4A, Equities defined as Stocks or Options.

C. Supplemental Schedule and Annuity Savings Fund year-to-year ending balances and beginning balances must equal.

Board Response:

PERAC's Recommendation has been accepted and implemented by the Board.

3. Annuity Reserve Interest

In CY 2000, balances in the Annuity Savings Fund were transferred to the Annuity Reserve Fund for retirees at the end of each calendar year rather than at the time of retirement. CY 2001 and CY 2002 were done correctly.

Recommendation:

As pointed out in the prior audit dated October 17, 2002, pursuant to G.L. c. 32, § 22 (2) (a), member balances should be transferred from the Annuity Savings Fund to the Annuity Reserve Fund when retirement allowances become effective. MWRA Retirement System should determine monthly CY 2000 retirees; calculate monthly interest and make a correcting year-to-date compounding entry. The adjusting entry would credit the Annuity Reserve Fund and debit the Pension Reserve Fund for interest improperly recorded in CY2000. This entry should be made in the current month of CY 2004.

Board Response:

PERAC's Recommendation has been accepted and implemented by the Board.

4. Expenses

With the exception of the investment manager fees and some travel, the majority of the expense checks written for the operation of the retirement system are paid by the Mass Water Resource Authority, located at the Charlestown Naval Yard in Boston. MWRA documents the expenses paid on a quarterly basis and sends a bill to the retirement system for reimbursement. Check writing, as well as the cleared checks, are not under the control of the retirement system.

MWRA Retirement System

EXPLANATION OF FINDINGS AND RECOMMENDATIONS (CONT.)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

Recommendation:

The retirement system should be responsible for writing their own expense checks and maintaining cancelled and voided checks.

Board Response:

PERAC's Recommendation is being further reviewed by the Retirement Board and the Authority.

5. Contracts

Contracts were reviewed to insure that there is an executed contract on file; the RFP process was documented and bids were solicited in a proper manner. In the audit sample, actual management fees charged did not match the invoiced agreed to by the MWRA Board. In other cases, the auditors could not find copies of agreed upon management fees.

Recommendation:

MWRA Board should develop a plan to review all contracts for completeness. This includes but is not limited to a review of all investment management or consultant fees agreed upon in the original contract(s) and a review of all consultants to ensure that starting after January 1, 1999, on or before the fifth anniversary of hiring of a consultant and every fifth year thereafter, the MWRA requests authorization from PERAC to continue to retain consultants.

Board Response:

PERAC's Recommendation has been accepted and will be implemented by the Board.

6. Office Layout

The Massachusetts Water Resources Authority Retirement System Office is housed within the Chelsea Headquarters of the Massachusetts Water Resources Authority. The office is clean, modern and utilizes an open-space modular concept. A large number of employees occupy both floors of Chelsea Headquarters. The retirement employee offices are against an interior wall and a secretary's station is located overlooking some of the employee offices and the filing cabinets. Over the course of conducting the examination of the MWRA Retirement system, the auditors observed a lack of internal controls related to possible general access to retiree's files and active member files.

Several observations confirmed that office employees could not maintain control of these important files because either they were simultaneously away from their desks on business or out of sight of the files. The auditors recognize that it is difficult for employees to keep track of individual files and/or drawers to maintain security every minute of every day. The auditors on several occasions, before or after hours, were able to pull on the file drawers and find that they could be opened after the office was officially closed.

MWRA Retirement System

EXPLANATION OF FINDINGS AND RECOMMENDATIONS (CONT.)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

In addition, if a Massachusetts Water Resources Authority employee wanted to review retirement options with the retirement staff without the knowledge of fellow employees, the current open space layout would make it very difficult to obtain individual privacy.

Recommendation:

It is recognized that the Massachusetts Water Resources Authority provides space to the MWRA Retirement System without charge. However, the MWRA Retirement System, as a separate and distinct legal entity from the Massachusetts Water Resources Authority, is obligated to protect the active and retired members files (these files contain all sorts of personal data including social security numbers, pay schedules, bank account numbers, military records, birth records, and medical information etc.). The Board must ensure that all member records are safe and secure at all times.

PERAC memorandum #19/2003, dated June 9, 2003, entitled 'Privacy and Security of Boards' Records, Documents and Communications' discusses the need for retirement offices to give adequate space to consult with members in private. The Board should dedicate a private area for consultations with its members.

Board Response:

PERAC's Recommendation is being further reviewed by the Retirement Board and the Authority.

Administrative Observation

Of the 106 retirement systems in the Commonwealth of Massachusetts, the MWRA Retirement Board is the only three-member retirement board.

As of July 1, 1996, G.L. c. 32, § 20 (4), (b) requires that Boards shall consist of five members. The MWRA Retirement System was not included in this requirement, however, it appears the members of the system would derive the same benefits of a five-member board as the other 105 systems in the Commonwealth of Massachusetts. The Board should consider applying to the appropriate authority to request expansion of the Board to five members.

Board Response:

PERAC's Recommendation is being further reviewed by the Retirement Board

Final determination

PERAC audit staff will follow-up in six (6) months to ensure appropriate actions have been taken regarding all findings.

MWRA Retirement System

STATEMENT OF LEDGER ASSETS AND LIABILITIES

**FOR THE THREE YEAR PERIOD BEGINNING JANUARY 1, 2000
AND ENDING DECEMBER 31, 2002**

FOR THE PERIOD ENDING DECEMBER 31,			
ASSETS	2002	2001	2000
Cash	\$1,110,981	\$3,640,779	\$2,830,510
Short Term Investments	4,905,525	1,890,187	2,984,940
Fixed Income Securities	30,216,635	35,601,217	33,778,125
Equities	17,793,098	16,662,700	7,197,415
Mutual or Commingled R/E Funds	27,328,844	30,103,581	36,695,664
Mutual or Commingled Venture Capital	10,781,089	9,797,586	13,404,038
Treasurer's Master Trust	21,313,959	19,112,694	18,254,872
Pooled Alternative Investment Funds	827,763	1,467,491	2,858,395
Pooled Real Estate Funds	10,779,867	10,339,412	8,717,327
PRIT Fund	1,043,595	1,151,989	1,222,234
Interest Due and Accrued	338,335	396,644	544,469
Accounts Receivable	193,070	170,603	275,831
Accounts Payable	(4,809,307)	(6,740,065)	(4,233,390)
TOTAL	<u>\$121,823,453</u>	<u>\$123,594,818</u>	<u>\$124,530,431</u>
FUND BALANCES			
Annuity Savings Fund	\$59,249,052	\$58,206,683	\$53,591,616
Annuity Reserve Fund	9,629,404	4,707,834	3,121,548
Pension Fund	22,905,659	22,352,075	20,850,895
Military Service Fund	5,143	5,092	4,997
Expense Fund	0	0	0
Pension Reserve Fund	30,034,195	38,323,134	46,961,376
TOTAL	<u>\$121,823,453</u>	<u>\$123,594,818</u>	<u>\$124,530,431</u>

MWRA Retirement System

STATEMENT OF CHANGES IN FUND BALANCES

**FOR THE THREE YEAR PERIOD BEGINNING JANUARY 1, 2000
AND ENDING DECEMBER 31, 2002**

	Annuity Savings Fund	Annuity Reserve Fund	Pension Fund	Military Service Fund	Expense Fund	Pension Reserve Fund	Total All Funds
Beginning Balance (2000)	\$49,396,128	\$2,122,632	\$18,977,213	\$4,904	\$0	\$49,457,033	\$119,957,910
Receipts	7,329,986	60,177	2,764,016	93	1,126,227	(2,495,657)	8,784,842
Interfund Transfers	(1,205,296)	1,205,296	0	0	0	0	0
Disbursements	(1,929,202)	(266,558)	(890,335)	0	(1,126,227)	0	(4,212,321)
Ending Balance (2000)	53,591,616	3,121,548	20,850,895	4,997	0	46,961,376	124,530,431
Receipts	7,866,696	117,993	2,788,022	95	1,198,118	(8,638,596)	3,332,326
Interfund Transfers	(1,854,113)	1,853,758	0	0	0	355	0
Disbursements	(1,397,516)	(385,464)	(1,286,841)	0	(1,198,118)	0	(4,267,939)
Ending Balance (2001)	58,206,683	4,707,834	22,352,075	5,092	0	38,323,134	123,594,818
Receipts	7,403,756	215,863	2,766,726	51	981,662	(8,288,939)	3,079,119
Interfund Transfers	(5,382,772)	5,382,772	0	0	0	0	0
Disbursements	(978,614)	(677,065)	(2,213,142)	0	(981,662)	0	(4,850,484)
Ending Balance (2002)	<u>\$59,249,052</u>	<u>\$9,629,404</u>	<u>\$22,905,659</u>	<u>\$5,143</u>	<u>\$0</u>	<u>\$30,034,195</u>	<u>\$121,823,453</u>

MWRA Retirement System

STATEMENT OF INCOME

**FOR THE THREE YEAR PERIOD BEGINNING JANUARY 1, 2000
AND ENDING DECEMBER 31, 2002**

	FOR THE PERIOD ENDING DECEMBER 31,		
	2002	2001	2000
Annuity Savings Fund:			
Members Deductions	\$6,254,836	\$6,423,432	\$6,040,047
Transfers from other Systems	63,551	125,549	35,440
Member Make Up Payments and Redeposits	312,927	355,678	247,534
Member Payments from Rollovers	0	0	0
Investment Income Credited to Member Accounts	<u>772,443</u>	<u>962,038</u>	<u>1,006,965</u>
Sub Total	<u>7,403,756</u>	<u>7,866,696</u>	<u>7,329,986</u>
Annuity Reserve Fund:			
Investment Income Credited Annuity Reserve Fund	<u>215,863</u>	<u>117,993</u>	<u>60,177</u>
Pension Fund:			
3 (8) (c) Reimbursements from Other Systems	267,628	235,840	222,513
Received from Commonwealth for COLA and Survivor Benefits	0	0	0
Pension Fund Appropriation	<u>2,499,099</u>	<u>2,552,182</u>	<u>2,541,503</u>
Sub Total	<u>2,766,726</u>	<u>2,788,022</u>	<u>2,764,016</u>
Military Service Fund:			
Contribution Received from Municipality on Account of Military Service	0	0	0
Investment Income Credited Military Service Fund	<u>51</u>	<u>95</u>	<u>93</u>
Sub Total	<u>51</u>	<u>95</u>	<u>93</u>
Expense Fund:			
Expense Fund Appropriation	0	0	0
Investment Income Credited to Expense Fund	<u>981,662</u>	<u>1,198,118</u>	<u>1,126,227</u>
Sub Total	<u>981,662</u>	<u>1,198,118</u>	<u>1,126,227</u>
Pension Reserve Fund:			
Federal Grant Reimbursement	0	0	0
Pension Reserve Appropriation	0	0	0
Interest Not Refunded	7,718	25,748	35,836
Miscellaneous Income	351	0	0
Excess Investment Income	<u>(8,297,008)</u>	<u>(8,664,345)</u>	<u>(2,531,493)</u>
Sub Total	<u>(8,288,939)</u>	<u>(8,638,596)</u>	<u>(2,495,657)</u>
TOTAL RECEIPTS	<u>\$3,079,119</u>	<u>\$3,332,326</u>	<u>\$8,784,842</u>

MWRA Retirement System

STATEMENT OF DISBURSEMENTS

**FOR THE THREE YEAR PERIOD BEGINNING JANUARY 1, 2000
AND ENDING DECEMBER 31, 2002**

FOR THE PERIOD ENDING DECEMBER 31,			
Annuity Savings Fund:	2002	2001	2000
Refunds to Members	\$614,357	\$1,059,560	\$1,431,444
Transfers to other Systems	<u>364,257</u>	<u>337,956</u>	<u>497,758</u>
Sub Total	<u>978,614</u>	<u>1,397,516</u>	<u>1,929,202</u>
Annuity Reserve Fund:			
Annuities Paid	677,065	385,464	266,558
Option B Refunds	<u>0</u>	<u>0</u>	<u>0</u>
Sub Total	<u>677,065</u>	<u>385,464</u>	<u>266,558</u>
Pension Fund:			
Pensions Paid			
Regular Pension Payments	1,742,768	808,680	688,056
Survivorship Payments	78,982	85,898	79,624
Ordinary Disability Payments	67,162	72,434	673
Accidental Disability Payments	307,945	298,018	98,009
Accidental Death Payments	0	0	0
Section 101 Benefits	0	0	0
3 (8) (c) Reimbursements to Other Systems	16,284	9,221	7,449
State Reimbursable COLA's Paid	0	12,590	16,524
Chapter 389 Beneficiary Increase Paid	<u>0</u>	<u>0</u>	<u>0</u>
Sub Total	<u>2,213,142</u>	<u>1,286,841</u>	<u>890,335</u>
Military Service Fund:			
Return to Municipality for Members Who Withdrew Their Funds	<u>0</u>	<u>0</u>	<u>0</u>
Expense Fund:			
Board Member Stipend	0	0	0
Salaries	194,629	212,656	187,996
Legal Expenses	16,253	17,151	21,964
Medical Expenses	0	0	0
Fiduciary Insurance	(10,781)	0	0
Service Contracts	7,048	0	0
Rent Expense	0	0	0
Travel Expenses	22,477	12,732	24,546
Administrative Expenses	7,283	40,367	11,135
Furniture and Equipment	0	0	2,632
Management Fees	675,334	837,068	794,444
Custodial Fees	26,460	36,029	42,707
Consultant Fees	<u>42,958</u>	<u>42,116</u>	<u>40,804</u>
Sub Total	<u>981,662</u>	<u>1,198,118</u>	<u>1,126,227</u>
TOTAL DISBURSEMENTS	<u>\$4,850,484</u>	<u>\$4,267,939</u>	<u>\$4,212,321</u>

MWRA Retirement System

INVESTMENT INCOME

**FOR THE THREE YEAR PERIOD BEGINNING JANUARY 1, 2000
AND ENDING DECEMBER 31, 2002**

	FOR THE PERIOD ENDING DECEMBER 31,		
	2002	2001	2000
Investment Income Received From:			
Cash	30,344	124,341	\$121,962
Short Term Investments	64,521	141,591	69,035
Fixed Income	2,561,063	2,481,416	2,424,962
Equities	306,428	166,591	54,322
Pooled or Mutual Funds	2,727,654	2,677,224	2,454,301
unresolved	(17,305)	0	0
Commission Recapture	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL INVESTMENT INCOME	<u>5,672,704</u>	<u>5,591,164</u>	<u>5,124,581</u>
Plus:			
Realized Gains	2,220,998	3,846,346	4,789,223
Unrealized Gains	10,559,238	9,518,841	10,293,331
Interest Due and Accrued on Fixed Income Securities - Current Year	<u>338,335</u>	<u>396,644</u>	<u>544,469</u>
Sub Total	<u>13,118,571</u>	<u>13,761,830</u>	<u>15,627,023</u>
Less:			
Paid Accrued Interest on Fixed Income Securities	(825,067)	(494,365)	(318,468)
Realized Losses	(3,848,458)	(1,902,061)	(1,652,377)
Unrealized Losses	(20,048,096)	(22,798,200)	(18,683,124)
Interest Due and Accrued on Fixed Income Securities - Prior Year	<u>(396,644)</u>	<u>(544,469)</u>	<u>(435,668)</u>
Sub Total	<u>(25,118,265)</u>	<u>(25,739,095)</u>	<u>(21,089,636)</u>
NET INVESTMENT INCOME	<u>(6,326,989)</u>	<u>(6,386,102)</u>	<u>(338,031)</u>
Income Required:			
Annuity Savings Fund	772,443	962,038	1,006,965
Annuity Reserve Fund	215,863	117,993	60,177
Military Service Fund	51	95	93
Expense Fund	<u>981,662</u>	<u>1,198,118</u>	<u>1,126,227</u>
TOTAL INCOME REQUIRED	<u>1,970,019</u>	<u>2,278,243</u>	<u>2,193,462</u>
Net Investment Income	<u>(6,326,989)</u>	<u>(6,386,102)</u>	<u>(338,031)</u>
Less: Total Income Required	<u>1,970,019</u>	<u>2,278,243</u>	<u>2,193,462</u>
EXCESS INCOME TO THE PENSION RESERVE FUND	<u>(\$8,297,008)</u>	<u>(\$8,664,345)</u>	<u>(\$2,531,493)</u>

MWRA Retirement System

STATEMENT OF ALLOCATION OF INVESTMENTS OWNED

(percentages by category)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

	BOOK VALUE	MARKET VALUE	PERCENTAGE OF TOTAL ASSETS	PERCENTAGE ALLOWED*
Cash	\$1,110,981	\$1,110,981	0.88%	100
Short Term	4,905,525	4,905,525	3.89%	100
Fixed Income	30,216,635	30,216,635	23.96%	40 - 80
Equities	17,793,098	17,793,098	14.11%	40
Mutual or Commingled R/E Funds	27,328,844	27,328,844	21.67%	
Mutual or Commingled Venture Capital	10,781,089	10,781,089	8.55%	
Treasurer's Master Trust	21,313,959	21,313,959	16.90%	
Pooled Alternative Investment Funds	827,763	827,763	0.66%	
Pooled Real Estate Funds	10,779,867	10,779,867	8.55%	
PRIT Fund	1,043,595	1,043,595	0.83%	
GRAND TOTALS	\$126,101,356	\$126,101,356	100.00%	

* The book value differs from the market value for individually owned Fixed Income Securities which are valued at amortized cost which is the original cost of the investment plus or minus any bond discount or bond premium calculated ratably to maturity. All other investments are reflected at their quoted market value.

For the year ending December 31, **2002**, the rate of return for the investments of the **MWRA** Retirement System was -6.18%. For the five-year period ending December 31, **2002**, the rate of return for the investments of the **MWRA** Retirement System averaged 3.87%. For the eighteen-year period ending December 31, **2002**, since PERAC began evaluating the returns of the retirement systems, the rate of return of the investments of the **MWRA** Retirement System was 7.47%.

MWRA Retirement System

SUPPLEMENTARY INVESTMENT REGULATIONS

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

The **MWRA** Retirement System submitted the following supplementary investment regulations, which were approved by PERAC on:

June 16, 1988

20.07(6) Sales of equity investments shall not exceed 200% of the average market value of all equity holdings in any twelve-month period.

March 18, 1993

20.03(1) Equity investments shall not exceed 40% of portfolio valued at market, including international equities which shall not exceed 10% of the portfolio valued at market.

20.04(1) United States based corporations and equities of corporations.

20.07(5) Equity investments shall be made only in securities listed on a United States stock exchange, traded over the counter in the United States, or listed and traded on foreign exchange.

February 7, 1995

20.03(1) Equity investments shall not exceed 50% of the total portfolio valued at market including international equities which shall not exceed 10% of the total portfolio valued at market.

April 19, 1995

20.07(9) Commingled real estate shall not exceed 5% of the total book value of the portfolio at the time of purchase provided that:

(a) the retirement board does not participate in the selection of personnel responsible for making real estate investments and should this be required, prior to any participation by the board, the board shall consult with PERAC to determine the appropriate course of action;

(b) such personnel retain authority in the decision making process, and

(c) should an investment in real estate result in the direct ownership of real estate or mortgage indebtedness, such shall be permitted only until such time as divestiture is prudent.

July 14, 1995

16.02(4) The board may employ a custodian bank and may charge such expenses against earned income from investments provided that such expenses shall not exceed in any one-year .08% of the value of the fund.

20.03(1) Equity investments shall not exceed 50% of the total portfolio valued at market including international equities which shall not exceed 15% of the total portfolio valued at market.

20.03(2) At least 35% but no more than 80% of the total portfolio valued at market shall consist of fixed income investments with a maturity of more than one year.

20.07(9) Commingled real estate shall not exceed 10% of the total book value of the portfolio at the time of purchase provided that:

(a) the retirement board does not participate in the selection of personnel responsible for making real estate investments and should this be required, prior to an participation by the board, the board shall consult with PERAC to determine the appropriate course of action;

MWRA Retirement System

SUPPLEMENTARY INVESTMENT REGULATIONS (CONT.)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

(b) such personnel retain authority in the decision making process, and
(c) should an investment in real estate result in the direct ownership of real estate or mortgage indebtedness, such shall be permitted only until such time as divestiture is prudent.

August 17, 1995

20.09(1) Venture capital investments shall not exceed 3% of the total market value of the portfolio at the time of the investment provided that in any system with assets in excess of nineteen million dollars, venture capital investments may be made up to an amount equal to 5% of the total market value of the portfolio at the time of investment. The board may make initial venture capital investments up to \$2,400,000 provided that no additional investments in venture capital are made that would be in excess of 5% of the total market value of the portfolio. Venture capital investments shall be considered a separate asset class, and provided further that:

(a) the board does not participate in the selection of the personnel responsible for making venture capital investments or otherwise exercise discretion in business affairs and should this be required, prior to any participation by the board, the board shall consult with PERAC to determine the appropriate course of action;

(b) such personnel retain authority in the decision making process, and

(c) should an investment in venture capital result in the direct ownership of securities, such shall be permitted only until such time as divestiture is prudent.

20.09(2) Venture capital investments shall only be made in venture capital funds operated by venture capital firms having their principal places of business in the United States.

20.09(3) All venture capital investment shall be made in companies which have their principal places of business in the United States.

September 7, 1995

840 CMR 21.00: Prohibited Investments

(3) Future Contracts other than as follows:

(a) Currency Futures, Calls and Forward Contracts may be written against securities in the international portfolio by an investment advisor registered under the Investment Advisors Act of 1940 and who has been granted a waiver from PERAC for international investments.

(b) Currency Futures, calls and Forward Contracts may be written against securities in the international portfolio to a maximum of fifty percent (50%) of the international portfolio non-dollar holdings at market value. Speculative currency positions unrelated to underlying portfolio holdings are strictly prohibited.

February 27, 1998

20.07(9) Commingled real estate shall not exceed 10% of the total book value of the portfolio at the time of purchase provided that:

(a) the retirement board does not participate in the selection of personnel responsible for making real estate investments and should this be required, prior to any participation by the board, the board shall contact PERAC to determine the appropriate course of action;

(b) such personnel retain authority in the decision making process, and

MWRA Retirement System

SUPPLEMENTARY INVESTMENT REGULATIONS (CONT.)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

(c) should an investment in real estate result in the direct ownership of real estate or mortgage indebtedness, such shall be permitted only until such time as divestiture is prudent.

February 28, 2000

16.08 The Massachusetts Water Resources Authority Retirement Board may invest in the Loomis Sayles Investment Trust Small Company Growth Fund. This fund has the same investment strategy and management team as a previously-approved separate account. The purpose of the change is to reduce administrative and custodial expenses.

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

NOTE 1 - THE SYSTEM

The plan is a contributory defined benefit plan covering all **MWRA** Retirement System member unit employees deemed eligible by the retirement board, with the exception of school department employees who serve in a teaching capacity. The Teachers' Retirement Board administers the pensions of such school employees.

Instituted in 1937, the System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. Membership in the plan is mandatory immediately upon the commencement of employment for all permanent, full-time employees.

The system provides for retirement allowance benefits up to a maximum of 80% of a member's highest three year average annual rate of regular compensation. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of twenty years of service or upon reaching the age of 55 with ten years of service. Normal retirement for most employees occurs at age 65 (for certain hazardous duty and public safety positions, normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and a portion of the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension. The average retirement benefit is approximately 75 - 85% pension and 15 - 25% annuity.

Active members contribute either 5, 7, 8, or 9% of their gross regular compensation. Members joining the retirement system after January 1, 1979 must contribute an additional 2% on regular compensation earned at a rate in excess of \$30,000. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Executive Director of PERAC according to statute. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustment granted between 1981 and 1997 and any increase in other benefits imposed by state law during that period are borne by the state.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current year pension payments as indicated on the most recent funding schedule as approved by PERAC's Actuary. Until recently, retirement systems were paying only the actual retirement benefits that were due each year.

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

Systems had no statutory authorization to put aside any money for the future benefits of employees who are now working. Large unfunded liabilities resulted from operating upon this pay-as-you-go basis. In 1977, legislation authorized local governments to appropriate funds to meet future pension obligations.

In 1983, additional legislation was passed requiring the transfer of investment earnings (in excess of the amount credited to member accounts) into the Pension Reserve Fund. These initiatives have significantly reduced the rate of growth of the retirement systems' unfunded liabilities, and in some systems have actually eliminated such liability.

Administrative expenses are funded through investment income of the system.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent upon several factors including: whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veteran's status, and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions. In addition, depending upon the number of years of creditable service, such employees are entitled to receive either zero (0%) percent, fifty (50%) percent, or one hundred (100%) percent of the regular interest which has accrued upon those deductions. Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES

The accounting records of the System are maintained on a calendar year basis in accordance with the standards and procedures established by the Executive Director of Public Employee Retirement Administration Commission.

The Annuity Savings Fund is the fund in which members' contributions are deposited. Active members contribute either 5, 7, 8, or 9% of their gross regular compensation. Voluntary contributions, redeposits, and transfers to and from other systems, are also accounted for in this fund. Members' contributions to the fund earn interest at a rate determined by PERAC. Interest for some members who withdraw with less than ten years of service is transferred to the Pension Reserve Fund. Upon retirement, members' contributions and interest are transferred to the Annuity Reserve Fund. Dormant account balances must be transferred to the Pension Reserve Fund after a period of ten years of inactivity.

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

The Annuity Reserve Fund is the fund to which a member's account is transferred upon retirement from the Annuity Savings Fund and Special Military Service Credit Fund. The annuity portion of the retirement allowance is paid from this fund. Interest is credited monthly to this fund at the rate of 3% annually on the previous month's balance.

The Special Military Service Credit Fund contains contributions and interest for members while on a military leave for service in the Armed Forces who will receive creditable service for the period of that leave.

The Expense Fund contains amounts transferred from investment income for the purposes of administering the retirement system.

The Pension Fund contains the amounts appropriated by the governmental units as established by PERAC to pay the pension portion of each retirement allowance.

The Pension Reserve Fund contains amounts appropriated by the governmental units for the purposes of funding future retirement benefits. Any profit or loss realized on the sale or maturity of any investment or on the unrealized gain of a market valued investment as of the valuation date is credited to the Pension Reserve Fund. Additionally, any investment income in excess of the amount required to credit interest to the Annuity Savings Fund, Annuity Reserve Fund, and Special Military Service Credit Fund is credited to this Reserve account.

The Investment Income Account is credited with all income derived from interest and dividends of invested funds. At year-end the interest credited to the Annuity Savings Fund, Annuity Reserve Fund, Expense Fund, and Special Military Service Credit Fund is distributed from this account and the remaining balance is transferred to the Pension Reserve Fund.

NOTE 3 - SUPPLEMENTARY MEMBERSHIP REGULATIONS

The **MWRA** Retirement System submitted the following supplementary membership regulations, which were approved by PERAC on:

June 2, 1987:

MAKE-UP PAYMENTS

Employees may request, in writing, permission to make-up payments for their previous employment if the retirement system from which they were previously employed is established within the provisions of M.G.L. Chapter 32.

Each employee requesting permission to make-up payments for their previous employment shall provide the Retirement System with a verified list of salaries, earned by them, by calendar year, not including any overtime or bonuses, so that a make-up payment can be calculated.

Make-up payments consist of regular contributions plus interest received at the time of a refund plus

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

NOTE 3 - SUPPLEMENTARY MEMBERSHIP REGULATIONS - (Cont'd.)

interest the employee's account would have earned had they not received a refund.

Employees of a temporary nature found to be ineligible for membership in a governmental unit covered under Chapter 32 may purchase past service upon becoming a permanent employee.

The purchase or buy back of prior creditable service must:

1) Be paid in one lump sum at any time prior to the day of retirement.

OR

2) Be paid in annual periodic payments subject to all of the following conditions:

A. Annual periodic payments must not exceed 5 years.

B. Each annual periodic payment must not be less than \$1,000 except for the final payment.

C. Each annual periodic payment must be received by the Retirement System in the month of June or July.

D. Annual periodic payments must begin within two years of employ at the Massachusetts Water Resources Authority and within three years of employ if hired prior to May 15, 1987.

September 4, 1990:

PERMANENT PART TIME EMPLOYEES. An employee who is employed at least 18.75 or 20 hours per week on a permanent basis shall become a member of the MWRA Retirement System.

INTERNS/CO-OPS, SEASONAL, ON CALL TEMPORARIES. An Intern/Coop, Seasonal or On Call Temporary employee shall not be allowed membership into the MWRA Retirement System until they are permanently employed. Upon becoming a member, they will be allowed to make payment toward creditable service for the time employed in that capacity.

CONTRACTUAL (MWRA Employment Contract) A contractual employee of the MWRA shall become a member of the MWRA Retirement System if later permanently employed. Upon becoming a member, they will be allowed to make payment toward creditable service for the time worked in that capacity.

April 16, 1993

FULL TIME EMPLOYEES

Membership in the MWRA Retirement System is mandatory for all employees who are regularly employed on a full time basis and whose employment commences prior to the attainment of age 65.

PERMANENT PART TIME EMPLOYEES

Part time employees working a minimum of 19 hours per week must become members of the MWRA Retirement System.

Creditable service shall be calculated on a pro rated basis as it relates to a full time position.**

****DEFINITION:** A work day is based on a seven and one half (7 1/2) hour period of employment in a thirty-seven and one half (37 1/2) hour week.

PART TIME EMPLOYEES

Who work less than 19 hours per week shall not become members of the MWRA Retirement System.

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

NOTE 3 - SUPPLEMENTARY MEMBERSHIP REGULATIONS - (Cont'd.)

INTERNS/CO-OPS

Internship is limited to 1462 hours, which is equivalent nine months for full time and can be spread out to twelve months for part time. Interns/Co-Ops will only be allowed to work one internship/co-op at the MWRA. Inters/Co-Ops shall not become members of the MWRA Retirement System.

CONTRACT EMPLOYEES

Hired to perform a specific set of duties for a limited time (Less than 1 year); that will perform tasks above the capability or experience level of existing personnel; or hired to fulfill essential duties when coverage by existing staff is not feasible due to vacation schedules, illness, job vacancy, special projects, etc. Contract employees shall not be eligible for membership in the MWRA Retirement System.

CONSULTANTS

(Fee For Services) Hired to perform specialized services for a limited time that are beyond the expertise or capability of existing personnel. Consultants shall not be eligible for membership in the MWRA Retirement System.

ON CALL EMPLOYEES

Employees hired to fulfill the temporary clerical/other needs of the MWRA. "On call" employees are hired on a "annual contract" basis, (within on notice termination clause for both parties), that commences on the date of hire and ends on the one year anniversary of the date of hire. The "On Call: program employees shall not be eligible for membership in the MWRA Retirement System.

TEMPORARY, SEASONAL EMPLOYEES

Employees hired to perform an assignment that is not of a continuing nature during a specific period of time. Temporary, seasonal employees shall not be eligible for membership in the MWRA Retirement System.

ON CALL, TEMPORARY INTER/CO-OP AND PART TIME EMPLOYEES

Who become full time employees may be eligible to "buy back" creditable service which was earned while at less than part time, (19 hours per week and therefore ineligible for membership in the MWRA Retirement System); by the discretion and eventual vote of the Retirement Board provided that creditable service shall be granted based on actual service rendered.

Effective April 15, 1993, all new employees classified not full time and thus not eligible to become members of the MWRA Retirement System, must contribute to the alternative defined contribution retirement plan system.

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

NOTE 4 - ADMINISTRATION OF THE SYSTEM

The System is administered by a three person Board of Retirement consisting of the Secretary Of The Authority who shall be a member ex officio, a second member appointed by the governing authority and a third member who shall be elected by the members in or retired from the service of such system.

Ex officio Member: Joseph A. MacRitchie

Appointed Member: Kenneth Wissman Term Expires: 6/30/06

Elected Member: James M. Fleming Term Expires: 6/30/07

The Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the system. The board must annually file a financial statement of condition for the system with the Executive Director of PERAC.

The investment of the system's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board and are then submitted to the PERAC Actuary for verification prior to payment. All expenses incurred by the System must be approved by at least two members of the Board.

The following retirement board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts as follows:

Treasurer - Custodian:)	
Ex officio Member:)	\$1,000,000
Elected Member:)	National Union Fire Insurance Company
Appointed Member:)	
Staff Employee:)	

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

NOTE 5 - ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by **Mellon Consultants** as of **January 1, 2003**.

The actuarial liability for active members was	\$123,394,185
The actuarial liability for retired members (includes inactives) was	<u>22,793,959</u>
The total actuarial liability was	146,188,144
System assets as of that date were	<u>146,188,144</u>
The unfunded actuarial liability was	\$0
The ratio of system's assets to total actuarial liability was	100.0%
As of that date the total covered employee payroll was	\$66,710,911

The normal cost for employees on that date was 8.99% of payroll

The normal cost for the employer was 5.09% of payroll

The principal actuarial assumptions used in the valuation are as follows:

Investment Return: 8.00% per annum

Rate of Salary Increase: 5.00% per annum

GASB STATEMENT NO. 25, DISCLOSURE INFORMATION AS OF JANUARY 1, 2003

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Cov. Payroll ((b-a)/c)
1/1/2003	\$146,188,144	\$146,188,144	\$0	100.0%	\$66,710,911	0.00%
1/1/2002	\$141,069,108	\$141,069,108	\$0	100.0%	\$66,321,556	0.00%
1/1/1999	\$96,318,000	\$96,318,000	\$0	100.0%	\$66,782,000	0.00%
1/1/1998	\$77,712,000	\$77,712,000	\$0	100.0%	\$63,579,000	0.00%
1/1/1997	\$58,185,000	\$58,185,000	\$0	100.0%	\$60,120,000	0.00%

MWRA Retirement System

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE THREE YEAR PERIOD ENDING DECEMBER 31, 2002

NOTE 6 - MEMBERSHIP EXHIBIT

Retirement in Past Years	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Superannuation	1	3	5	5	7	11	12	15	18	82
Ordinary Disability	0	0	0	0	0	0	0	2	0	1
Accidental Disability	0	2	0	1	0	2	3	2	2	1
Total Retirements	1	5	5	6	7	13	15	19	20	84
Total Retirees, Beneficiaries and Survivors	6	11	16	23	33	49	64	94	112	194
Total Active Members	1,416	1,414	1,511	1,498	1,538	1,469	1,451	1,501	1,312	1,230
Pension Payments										
Superannuation	\$48,942	\$83,581	\$141,937	\$169,174	\$251,817	\$409,577	\$491,843	\$688,056	\$808,680	\$1,742,768
Survivor/Beneficiary Payments	3,502	4,288	5,813	5,880	11,434	18,481	37,582	79,624	85,898	78,982
Ordinary Disability	0	0	0	0	0	0	0	673	72,434	67,162
Accidental Disability	0	22,804	28,817	44,241	46,929	38,294	36,132	98,009	298,018	307,945
Other	0	0	0	0	2,764	278	6,654	23,973	21,811	16,285
Total Payments for Year	\$52,444	\$110,673	\$176,567	\$219,295	\$312,944	\$466,630	\$572,211	\$890,335	\$1,286,841	\$2,213,142

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